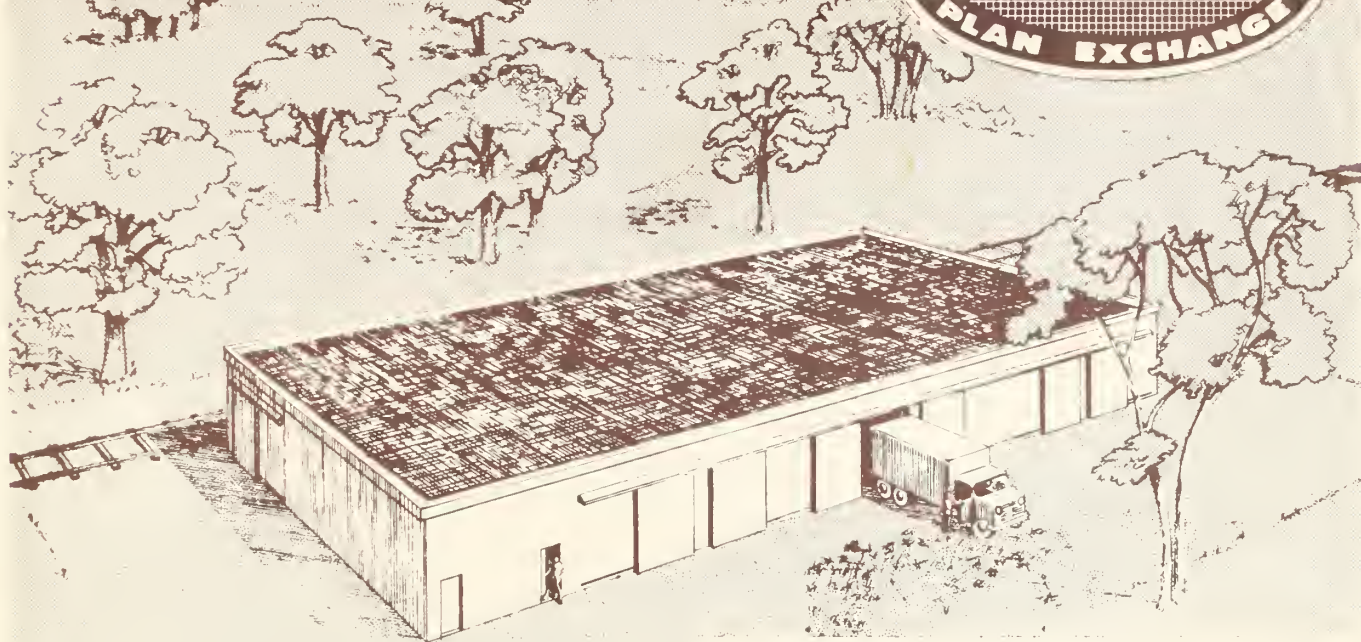


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# 60,000 Cwt. POTATO WAREHOUSE

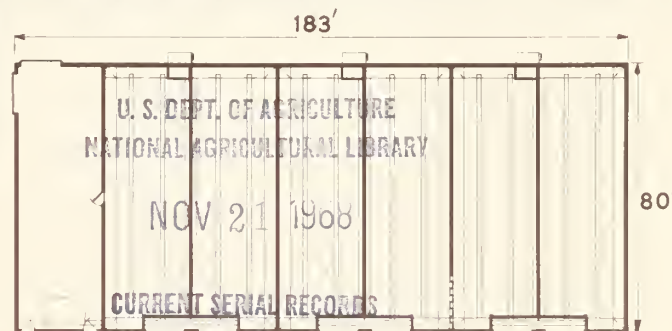


Potato storage research has resulted in markedly improved methods for handling and ventilating stored potatoes. Two farm building plan exchange committees—North Central and Western Regional—requested plans for an aboveground flat-type storage building, adaptable to the new techniques of storage management.

Equipped with temperature controls and forced-air ventilation, this building is designed for the fall-crop areas of the United States. It is adaptable for storing and packing table-stock potatoes, for storing seed potatoes, and for storing potatoes that are to be processed into chips, frozen french fries, flakes, and similar products.

Six separate storage bins, each with a capacity of approximately 10,000 cwt., and a shipping (or packing) room which permit packing out about 1,000 cwt. (or two carloads) of potatoes per day. A door to each bin provides easy access for truck and other equipment.

The single-story wood frame structure has a floor area of approximately 14,640 square feet. Construction



is 2- by 10-inch studs spaced 24 inches on center. Batt-type insulation (6 to 8 inches thick) is placed between the studs and joists, and a 4-mil-polyethylene vapor barrier is attached over the insulation. The building's exterior walls are sheathed on the inside with 1-inch shiplap lumber and covered on the outside with corrugated sheet metal. The roof decking is 1-inch tongue-and-groove lumber covered with a built-up roof, and the floor is reinforced concrete slab-on-grade.

The foundations shown on the working drawings are adequate for all of the drier regions of the Dakotas, Colorado, Nebraska, and Idaho, but the concrete slab may require deeper footings in Maine and in areas around the Great Lakes.

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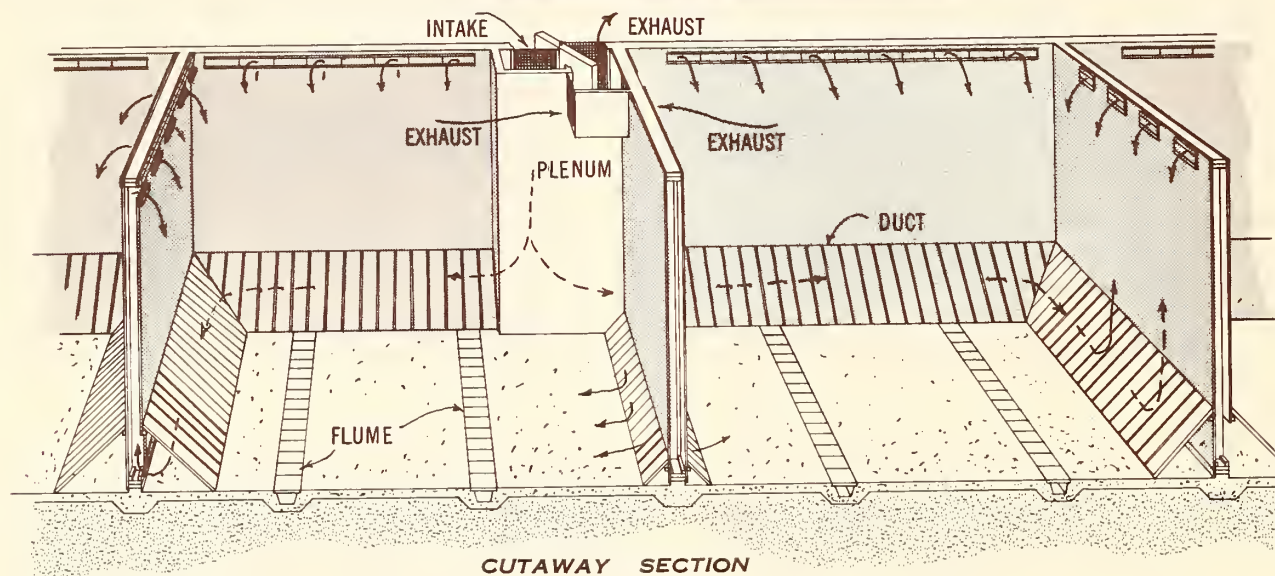
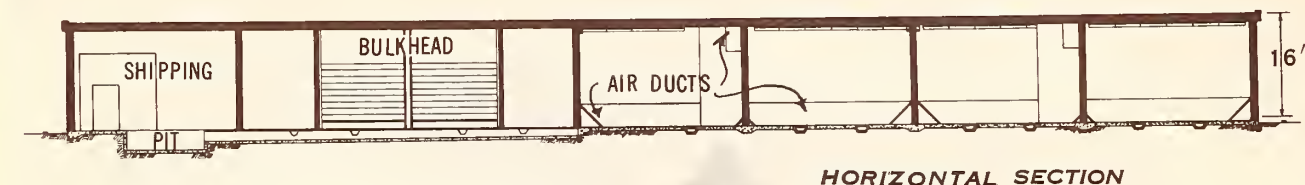
The ventilating system is designed to function in two ways. Part of the system cools the potatoes, with a minimum of shrinkage, and the other part is used to move air through the bins of potatoes.

One air intake and fan is provided for each pair of bins. This use of small equipment makes it easy to ventilate only that part of the building actually in use. Thus, it would not be necessary to use the whole ventilating system.

The cooling system includes the air intake plenum and fan, the large ducts around the perimeter of each

pair of bins, facilities for air movement in the walls between the bins, and the exhaust opening from the bin. To cool the potatoes, outside air is drawn in through the plenum, forced through the perimeter ducts, into the walls at the bottom, out of the walls at the top, over the pile of potatoes, and then exhausted. Additional air is discharged into the work area through the open truck doors and moves up over the pile of potatoes to the exhaust opening.

A door in the intake-and-exhaust openings controls the temperature. For cooling, the door is set in the



open position. This prevents recirculation and the air is entirely exhausted. To prevent freezing and to equalize the temperatures, the door is closed and the air is recirculated inside the bin. The intake-and-exhaust door may be opened and closed with an electric damper motor. A thermostat in the bin controls the motor and maintains a constant temperature. A low-level thermostatic control in the air duct will prevent freezing of the potatoes near the duct.

Complete working drawings may be obtained from the extension agricultural engineer at your State university. There may be a small charge to cover cost of printing.

If you do not know the location of your State university, send your request to Agricultural Engineer, Federal Extension Service, U.S. Department of Agriculture, Washington, D.C. 20250. He will forward your request to the correct university.

ORDER PLAN 5927, 60,000 CWT. POTATO WAREHOUSE

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